

were present a P.U.S. child with her governess, an ex-student. They were glad to have the opportunity to scout in company, and all enjoyed the afternoon on Loughrigg.

In private enterprise, surveying has been taken up more this term than previously. It is a study of absorbing interest, though there are difficulties in it, certainly, in obtaining accurate results from measurements; but it gives great satisfaction when successfully accomplished. First Aid work has been done by a few Peewits, but press of work has prevented others. Most Peewits have learnt Morse, and one showed herself efficient in Semaphore also. Tassels have been gained as well in General Efficiency, Nature Lore, Housecraft, Handicrafts, and Needlecraft. The Scout's Tassel deserves a word or two about itself. Each week there has been work set to do, varied in its nature. The work included the making of a model stick ladder, the accurate knowledge of one's own dimensions, etc. The last part was original work of any description that had some bearing on scouting. One Peewit made up a poem, another set it to music, another made an indiarubber stamp of a Peewit's head, to be used officially on Scouting Notices, etc. At the Demonstration, tassels were awarded, and afterwards Miss Mason graciously accepted from the Peewits the first Honour of the White Tip.

J. H. SMITH.

HINTS ON THE TEACHING OF DRAWING IN THE P.U.S.

In answer to two welcome letters stating the difficulties of the P.N.E.U. schoolwork drawing lessons, I write the following suggestions, and if anyone acts on them it will give me great pleasure to see and hear results, either through the Editor or directly at my own address.

Question 1 is on the difficulties of perspective in original illustration. Should rules of perspective be taught to children, and if so, at what age?

Answer.—To the best of my knowledge the only way worth following is that of the scholars of whatever age finding out facts for themselves by observation and experiment. This road will not, perhaps, lead them very far, but will give some sure foundation. They are all aware that distance lessens the apparent size of an object. It will be excellent if pupils can be put in the way of finding out for themselves in what proportion this happens, as the distance *from the observer* increases. Again, the four lines of a plain table top can be drawn from different points of view, so that the queer behaviour of the lines, or the easier views are noticed. Or, again, the change in a horizontal line when looked at from above, on a level, or from below can easily be appreciated by sitting on the floor or standing on a chair or taking any position between these levels, and looking at the lines of the furniture or walls. Of course, out of doors this is seen on a larger scale in the lines of tree tops, hedges, roads, houses. Do not overdo the lesson, but work often for a short time:

Question 2.—Do you recommend that young scholars have few colours?

Answer.—Certainly. Vermilion, chrome yellow, and cobalt to begin with, and if this is too small a number add emerald green, orange chrome, and purple lake. These six will be amply enough till the scholars become advanced. Better pigments may be found to supply these cheap ones if

wished; but the six, one of each hue, is an ample supply. Then for advanced workers add as required crimson lake, yellow ochre, Hooker's green, French ultramarine blue, Indian yellow, Indian red.

Question 3.—Do you think lessons on design advisable for any age?

Answer.—Practice design, scribbling anything out of your head morning, noon, and night, if you want to get on with any sort of art work. Blobs, white chalk on brown paper, or any materials, will do to work with for what is no more than a scribble. For lessons there is an infinity of problems to set scholars, any one of which can be worked out by them in an infinity of ways, *i.e.*, "Draw a circle on your paper, and add four straight lines." To the inevitable questions, "Do you mean this? or this?" the answer is only, "Draw a circle, and add one, two, three, four straight lines." For a beginning a far simpler problem should be set, as "Divide the paper in two with a straight line." The scholars should be led to see, without being told, that this can be done by either a vertical or a slanting or a horizontal line, and that the problem is not to divide the paper in half, but to divide it as stated into two. The two portions can be coloured then by the scholar, which will make their relative size more apparent to him. In these exercises aim at answering no questions, making no suggestions, but get the scholar to understand whether the directions have been carried out by him. It is essential that the teacher work the problem out of sight, and the various solutions can be compared when work is finished. Also put the class on their honour not to copy each other, if several work together, as this naturally defeats the object of the practice, which is to quicken the imagination in matters of form and proportion.

Question 4 is about books on Art Teaching. There is an English translation by Luard of Lecoq de Boisbaudran's work. It is published by Macmillan at 6s., with the title, "The Training of the Memory in Art, and the Education of

the Artist." Any information about the Ablett System is useful. It is the system of the Royal Drawing Society. Clausen's Academy Lectures are excellent. C. J. Holmes is suggestive and modern. Do not use handbooks of advice to artists; only read the words and about the practice of the best artists.

Question 5.—Should charcoal be used for the picture talk work?

Answer.—Yes, if it is so stated on the programme. Only use pencil if the mess of charcoal becomes impossible—or better, use a brush and monochrome—that is, a black or brown pigment. Charcoal drawings can be fixed by spraying over them a saturated solution of white shellac and methylated spirit, which a chemist can mix cheaply. A spray diffuser costs 6d. or 1s. at an artists' colourman.

Question 6.—How can scholars improve in figure drawing?

Answer.—By drawing from memory after drawing from, or looking at, the living model. The students at Scale How have been amusing themselves by drawing skeletons to fit five points put anyhow, and used for head and hands and feet.

What is to be done in the drawing lesson is that the scholar sets down his own ideas, and the result to be obtained is that the spectator sees these ideas. All imperfect as the work is, encourage and enjoy all genuine effort on the part of the scholar to put down what he is thinking of himself. Nothing else than this is of any value, though work done from dictation may have a far more plausible appearance.

The only other question is about outdoor work, and of that I can only say—Never expect to like your work when done; only work in order to honestly set down what the subject makes you feel, and next month or year you will see something in your work, or other people will. The indispensable quality wanted in outdoor work is a true relation between the various tones, and we all know how difficult that is to get, even indoors. If the day is hot, give the colour special treatment to keep it moist enough, *i.e.*, damp the paper and attend

to adding water, without spoiling the mixings with over-stirring up. Very good sketching lessons are to be had in the holidays. They are advertised in the *Studio* and *Artist* magazines.

—M. L. SUMNER.

[Miss Sumner's address is Kelbarrow, Grasmere.]

BOOK LIST.

"Garibaldi and the Making of Italy." By E. Trevelyan.

A very delightful and readable book; not too long.

"Tolstoy." By Romain Rolland.

"A Book of Noble Women." By C. C. Cairns.

Delightful sketches of some of the world's fine women, viz., Margaret of Scotland, Catherine of Siena, Lady Russell, Jenny Lind, Dorothea Beale, etc.

"The Dragon of Wessex." By Percy Dearmer.

A delightful book for children.

"Roses of Martyrdom." 2s. 6d. By C. M. Cresswell.

Tales of S. Laurence, S. Genes, S. Phocos, and others, charmingly told and prettily illustrated.

"Nuns of Port Royal." By M. E. Lowndes.

A very interesting account drawn chiefly from their own letters and diaries of the nuns and the wonderful Mère Angélique Arnauld.

"Little Snow Sister."

"The Lady of the Decoration."

Two fascinating tales of Japanese life, written by an English woman who went out as missionary and educationalist.

"Lady Wilson's Letters."

"From the Bottom Up." By Alex. Irwin.

"Across the Bridges." By Alex. Patterson.

Both dealing with social problems by experienced men, and most interesting.

"Mysticism." By Evelyn Underhill.

A very interesting account of the mystics and their thought.

A. E. PYPER.

PETROLOGY.

Many people have definite, even if limited, ideas connected with the different colours on the geological map of Britain. Grey means aged rocks in the Cambrian and Cumbrian Mountains, and stands very naturally for slates in one's mind. Dark brown for Old Red Sandstone and light-red for New suggest the red Eildon Hills or Devonshire cliffs and the Vale of Eden. Pale blue in carboniferous areas recalls the mountain limestone of the Pennine Chain. Yellow brown is inseparably connected with the Oolite and the parallel strata of the Yorkshire cliffs north of Filey Brigg. Green seems to represent quite properly the short green turf of the Chalk Downs; and the Tertiary sands and gravels are most suitably coloured in pale shades of sepia.

But when we examine the strata of which each geological formation is composed, in a full list such as that on pp. 196 to 199 in Harrison's Text Book of Geology, we find the same kind of rock recurring in every age.

If one has been impressed by the cliffs of Dovedale, or of the Wye at Symond's Yat, and has imagined that limestone was peculiar to the carboniferous system, it is a surprise to come upon that narrow band of Conistone limestone in the Ordovician of the Lake District, or the Magnesian Limestone of Knaresborough in the middle of red sandstones, or the Oolite limestones of Bath and Portland, so familiar as building stones. The white chalk of Flamborough and Beachy Heads is itself a limestone, and one of a mixed character from the same formation is Kentish ragstone. The British marbles from Connemara, Derbyshire, Devonshire, and the Isle of Purbeck are limestones altered by heat, and they belong to three different ages.

The occurrence of limestone in any age has much the same significance. It tells us that the beds beneath it were once at the bottom of a deep and quiet sea in which the limestone was deposited in layers of varying thickness according to the

time which elapsed before the sea bottom was raised to the surface again. In England we have mountain limestone as much as 3,000 feet thick, and it is difficult to conceive of the passage of time necessary to the formation of such a mighty depth of rock. What countless generations of lowly animals lived and died in the seas and helped to form the slowly accumulating mass of limestone! Some of them were corals such as those that are at work to-day forming reefs in the Pacific Ocean. Some were the crinoids or stone lilies well known in Derbyshire rocks. Other limestones are made of whole or broken shells of molluscs, and the white chalk which attains a thickness of 1,000 feet consists of the remains of the tiniest and simplest of organisms, the Foraminifera, who live in minute shells of marvellous beauty.

It would be interesting to try to paint maps of the probable distribution of land and water in Britain in each geological age. For the whole land was rarely, if ever, all under water at once. The Lake District, for example, remained dry land from the end of the Silurian period until the Ice age. Even on the map it looks like an island surrounded by blue seas of Carboniferous limestone.

It makes us want to know where were the shores of such a sea, and we must look for some traces of sandstone beyond it, for sandstone betokens the shore where fragments of quartz brought down by rivers were dashed about and ground into sand before they were consolidated into rock. The Carboniferous strata in Scotland of the same age as the English mountain limestone are sandstones and shales, including occasional beds of coal, and coal is a token of former vegetation implying land. Between the two, in Northumberland, are alternating beds of sandstone and shale and limestone. To the North then lay the dry land in the days when that deep sea, in which the limestone of the Pennine Chain was formed, lay around the isolated heights of the Lake District.

In this case, as in so many others, after an incredibly long period of time, the sea bed was raised and quantities of

coarse sand were spread over the limestone and formed the Millstone Grit so conspicuous round Settle and Giggleswick. Grit is a coarse hard sandstone, and the sea floor must have sunk again very, very gradually as this deposit covered it, for in some parts of Yorkshire it is 5,000 feet thick. On the top of this come the coal measures showing where land emerged from time to time and supported vegetation.

Limestone and sandstone typify two classes of stratified rocks, the one organically formed from the remains of animals, the other mechanically formed from fragments of older rocks hardened into stone by some cement. Shale belongs to the latter class, and is made of hardened clay.

Sandstone, like limestone, may occur at any geological horizon, not only in the formations to which red sandstones give the name. The Torridon Sandstone of N.W. Scotland belongs to Pre-Cambrian times. We have Coniston grits and flags in the Silurian system here, of the same date as the Wenlock or Dudley limestone. The Carboniferous Calciferous Sandstone of Scotland has been referred to, and there are sandstone layers in the Yorkshire Oolite, and Greensands in the Cretaceous period, besides many Tertiary sands.

But shallow seas are not the only waters in which sandstones are deposited. For our red sandstones were formed in lakes, some fresh water and some landlocked, and their colour is due to the oxide of iron which cemented them. The limits of the lakes of the Old Red Sandstone period can be so well defined that names have been given to them. Lake Caledonia was the largest, and there was a Welsh Lake, also Lake Munster, Lake Orcadie, and many smaller ones. The rivers running into these lakes brought down quantities of mud and sand which now form beds of shale and sandstone, and the salts of iron in the water coloured them red. It is no use expecting to find many fossils in beds of very red sandstone because few fishes and crustaceans could live in waters so impregnated with iron salts. The same is true of the New Red Sandstone, an old-fashioned

term that included two geological systems, whose strata were also deposited in inland waters containing various minerals in solution. One of the most important of these is salt. These former lakes must have been rather like the Dead Sea, or the Great Salt Lake of Utah.

To complete the subject, mention should be made of a rock which was neither deposited in a deep nor in a shallow sea, nor in an inland lake. This is what we have in the most beautiful parts of the Lake District, the volcanic ash and beds of lava out of which Loughrigg and Wansfell and Fairfield and Helvellyn have been carved. Even the fragments shot out by a volcano lie in strata because they fell during successive eruptions. When the volcano became very active, it threw up large stones which form a kind of concrete called breccia. But only fine dust was laid down when the volcano was nearly exhausted, or at great distances from the crater, and this is now called Volcanic Ash, which is one of the Ordovician strata in the Lake District, and forms the mountains between Scawfell and Shap, from Ambleside nearly to Keswick. We know that this rock was not laid down under water because it includes no fossils except just at the bottom where the ashes may have fallen into a lake. When volcanic eruptions take place under water, then the ashes are interstratified with fossils, as they were in Wales during the Ordovician period. Breccia, formed of angular fragments not rounded off by friction in water, is easily distinguished from conglomerate, which consists of water-worn stones like pebbles.

Examples have been purposely chosen from stratified rocks because they are more easily classified than igneous rocks. But the facts all assure us that from the lithological character of a rock, the story of its deposition can be read.

A. C. DRURY.

BOTTICELLI.

How welcome are the Medici prints for picture-talks, and what a relief to be able to see all the detail!

Botticelli (1446-1510) belongs especially to Florence, and is the very incarnation of the spirit of the Renaissance and all that it stood for. Beyond every other painter his art gives us the ideals of his contemporaries coloured by his own intensely artistic and sympathetic nature. In him also we see the union of the two schools of painting—the realistic and dramatic art and energy of line of the goldsmith-painters, and the human and spiritual feeling of such men as Angelico. Botticelli was first apprenticed to a goldsmith, and later was well-taught the elements of painting by Filippo Lippi. After the death of the latter he came under the influence of Pollaiuolo, traces of which influence are to be seen in "Spring."

Of the pictures set for this term the first to be painted was "Spring," probably inspired by the verses of Poliziano, a favourite of Lorenzo the Magnificent, who was such a good friend to Sandro, as our painter was commonly known. These verses were written in praise of Giuliano, brother of Lorenzo, and Simonetta, the beautiful lady whom all Florence adored. Sandro's picture illustrates the Garden of Venus and the coming of Spring. Giuliano, attired as Mercury, is represented scattering the clouds of Winter, and Simonetta, Queen of Beauty, welcomes Spring garlanded with flowers and strewing roses. She is followed by Flora dropping anemones from her mouth and fleeing from the embrace of Zephyr, clad in deep blue. This is a typical example of Sandro's earlier work—the peculiar oval faces, high cheek-bones, and rather wistful expression, the tall, slender figures with clinging draperies, the rich embroideries, all these are crowned with an intense joy in the beauty and delight of nature in May. But joy was soon turned to sorrow, for Simonetta died shortly afterwards from consumption, and Giuliano was murdered by

the rivals of his house. In 1480 Botticelli put forth all his powers to surpass his brother artists in a fresco ordered by Simonetta's relatives, the Vespucci (one of whom was the famous Amerigo), for their parish church.

The figure he chose was that of St. Augustine sitting at his desk in deepest reflection, with his books and implements all round him. The fresco of which this was the companion was St. Jerome, by Ghirlandajo, who, however, had been content to paint only the exterior things in their fullest detail and to leave the heart and mind unexpressed.

Of the history of the famous tondo of the Madonna of the Magnificat, sadly altered by repainting, very little is known. It was painted after Botticelli came under the influence of Savonarola, who was then stirring all Florence with his preaching, and who caused Sandro to renounce his pagan myths and figures.

The figure of the Madonna of the Magnificat is considered to be the finest which Botticelli painted, and the expression of glory mingled with divine sorrow is only equalled by the tender and sympathetic upward regard of the Child. In this picture, too, the artist shows how entirely he has mastered design by his skilful arrangement of the hands and drooping heads all converging. Notice, too, how expressive the hands are; also the Botticellian background of open country with a stream, doubtless his own Arno.

Shortly after this, Sandro sustained a severe loss in the death of Lorenzo and the expulsion of the Medici, followed by the martyrdom of Savonarola. Then it was that the artist painted and gave to his true friend, Segni, "Calumny," the description of which we all know in "Ourselves." The colouring in this picture is said to be wonderfully preserved, and the detail of the architecture is a striking testimony to Botticelli's power.

"The Nativity," now in our National Gallery, is the only picture signed and dated, and the inscription at the top reads: "This picture I, Alessandro, painted at the end of the year

1500, in the troubles of Italy, in the half-time after the time, during the fulfilment of the Eleventh of St. John, in the second Woe of the Apocalypse, in the loosing of the devil for three years and a half. Afterwards, he shall be chained according to the Twelfth of John, and we shall see him trodden down as in this picture." This is, of course, a reference to the strife in France and an expression of his own faith in Savonarola.

The Holy Family form the central group, and angels introduce the Shepherds and Magi on either side. On the roof of the hut three angels in green, red, and white (symbolic of hope, love, and faith) sing Gloria in Excelsis, while above them twelve angels (in white, red, and brown), with an olive branch (signifying the new Peace) in one hand and a crown hanging from the other, dance against a background of gold and a sky of the tenderest shades of blue. Behind the hut is a belt of very dark trees, and in the foreground three angels in red, white, and green welcome three mortals (said by some to be Savonarola and his companions). Three demons or spirits of evil hasten to hide themselves, the one in the left-hand corner being especially well-drawn. The whole picture is, of course, an allegory; the Child, with His finger on His lip symbolising the words "I am the Word," will attract all mankind to him, and all sin will flee away.

It is, however, the choir of angels dancing that strikes one first; they are so full of joy, their hair and garments are blown by a very real wind, and one would almost expect them to move. The wings of all the angels, too, are particularly exquisite, being white on top and lined beneath with delicate pink or green. The Virgin's robes are red and brown, covered with a blue mantle reaching from her head. One of the kings (on the left) wears a robe of a very wonderful shade of yellow, and everywhere is the olive branch.

Tobit and the Archangels is not now generally supposed to be the work of Botticelli, but that of Botticini, who imitated the great master. There is the Botticellian background, but

the faces do not bear the wistful expression noted above. The story is taken from the Apocrypha, and tells how Tobit, a pious Jew, lost his eyesight, which was restored to him by his son Tobias by means of the gall of a monster fish which he caught.

Tobias is attired in a blue tunic with red hose and cloak, and Raphael is also in blue and holds a box in which to preserve the gall. The archangel on the right (apparently Gabriel) is in dark blue with lovely pink wings, while the figure on the left in armour seems to be Michael. The significance of the ball in his hand and the white dog at his feet, I do not know, and have not so far been able to find out.

Botticelli's last days, according to Vasari, were clouded by disease, and after his death in May, 1510, he was buried in the church which he had adorned with his fresco of St. Augustine.

There is, of course, a tremendous amount to learn about Botticelli, and we must take care lest we fail to see the forest for the trees.

"Masterpieces in Colour" is useful for giving some idea of the colouring, but the most useful book I have found is "Botticelli," in the Popular Library of Art (2s.). This has the advantage of giving details from various pictures.

Those who have Newnes' reproductions of Botticelli will find them very useful, but this series of painters was said to be going out of print. For a description of the period, Horsburgh's "Savonarola" and "Lorenzo the Magnificent" are fascinating, and for fiction there is of course "Romola." There is a very fine book on Botticelli just issued in the Arundel Library by the Medici Society containing twenty-five beautifully-coloured prints, amongst them all six set for this term; but the price of this book is 15s.

M. E. DAVIS.